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ABSTRACT

Score differentials between the revised Wechsler Intelligence Scale for Children (WISC-R) and the Wechsler Adult Intelligence Scale (WAIS) were investigated in 25 possibly mentally handicapped adolescents (10 white, 15 black). Each S was individually administered both the WISC-R and the WAIS. Results supported the hypothesis that for mentally retarded 16-year-olds, the scores on the WAIS would be significantly higher than on the WISC-R. Blacks scored lower than whites on both tests. (SB)

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A Comparison of WISC-R and WAIS Scales for Mentally Retarded Sixteen-Year-Olds

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A Comparison of WISC-R and WAIS Scales

Abstract

With the 1974 revision of the Wechsler Intelligence Scale for Children (WISC-R), there is an age overlap with the older WAIS for sixteen-year-olds. Using a sample of 25 sixteen-year-old suspected mentally retarded adolescents from North Carolina schools, the author investigated the score differentials between the WISC-R and the WAIS for this age group.

The t-test for correlated means reported significantly higher results for the WAIS than for the WISC-R. The difference for the total sample was 14.4 points for Verbal, 10.2 points for Performance, and 13.5 points for Full Scale. All scaled scores of the WAIS, except Similarities, were also significantly higher than for the WISC-R. For both whites and blacks treated as separate groups, significant differences were also found between the Verbal, Performance, and Full Scales, with the WAIS yielding higher scores as expected. A t-test for independent means revealed that mean differences for blacks were significantly higher than mean white differences for the Verbal and Full Scale, but not for the Performance Scale.

The author cautions that the wide discrepancies between results of the WISC-R and the WAIS require careful justification from the psychological examiner. Because of a more recent standardization sample, the WISC-R will likely be the preferred instrument in most cases. More research is needed to help explain differential test results for whites and blacks. Such investigations, in the author's opinion, will identify experiential background variables as important factors.

A Comparison of WISC-R and WAIS Scales for Mentally Retarded Sixteen-Year-Olds

Although deplored by many who are involved in the identification and classification of exceptional children, the use of the IQ score as a major criterion is generally awknowledged as common practice. A number of states have set legal limits for eligibility for special education services. Individual school units, as well as special programs such as Vocational Rehabilitation, also have specific IQ cutoff points that affect eligibility.

The Wechsler Scales are among the most widely used instruments for assessing ability level. With the widespread use of the Wechsler Intelligence Scale for Children - Revised (WISC-R) since its release in 1974, several problems have confronted the evaluator: (1) The WISC-R appears to yield lower IQ scores than the 1949 WISC and (2) for sixteen-year-olds the WISC-R appears to yield lower scores than the Wechsler Adult Intelligence Scale (WAIS). Wechsler, in the WISC-R Manual (1974), recommends that "at the levels where the WISC-R overlaps the WPSSI (ages 6-0 to 6-7) or the WAIS (ages 16-0 to 16-11), the examiner should choose the Scale that is most appropriate for his purposes" (p.53). In the author's opinion, this latitude offered the examiner can lead to considerable misunderstanding and possible misuse of the Wechsler Scales.

In a review of the literature, the investigator was unable to locate research which dealt specifically with WISC-R and WAIS differential results for mentally retarded sixteen-year-olds. However, in

a study of 40 subjects aged 16 years 11 months, Wechsler (1974) found that "the mean WAIS Full Scale IQ is about six points higher than the mean WISC-R Full Scale IQ, and similar differences will be noted for the Verbal and Performance IQs" (pp. 49-50). Other studes have reported differential results for the 1949 WISC and WAIS for below average subjects. Simpson (1970) concluded that the WISC and WAIS were not comparable for below average intelligence students. Disparities were greater for black Americans than for Anglo-Americans ($p = .05$) and Mexican-Americans ($p = .05$). There were no significant sex differences. Walker and Walker (1972) found a difference of 10 IQ points in favor of the WAIS when the same 50 EMR adolescents were tested with the WISC and 2 1/2 to 5 years later with the WAIS. Wesner (1973) found similar results when he compared the scores of 51 EMR adolescents on the WISC and the WAIS. Significant differences were found between the two tests with the WAIS Scales yielding higher estimates of ability than WISC Scales.

Although the above reported research concerns differentials between the WAIS and the WISC rather than the WISC-R, such studies have relevance to the present investigator's research. Doppelt and Kaufman (in press) investigated the question: "If the WISC-R sample had been tested with the WISC, what would their IQs have been?" Regression equations were used to estimate the WISC IQs of those in the WISC-R standardization sample. For below average subjects, little or no difference was found between Verbal WISC and WISC-R Scales; WISC Performance Scales were 6 points higher than the WISC-R, and WISC Full Scales were 3 points higher than the WISC-R.

The differential, with lower scores obtained on the WISC-R than on the WAIS for mentallyretarded sixteen-year-olds, is the problem of particular interest to the investigator since these tests are often used to provide objective evidence for educational placement recommendations. One of the crucial questions that faces the examiner, then, is whether to use the WISC-R or the WAIS for this age group.

Method

Subjects

The sample consisted of 25 sixteen-year-old suspected mentally retarded adolescents from central North Carolina schools. A total of 10 females (2 white and 8 black) and fifteen males (8 white and 7 black) were included. The sample was comprised of all sixteen-year-olds referred to the investigator for evaluation between January 1, 1976 and March 1, 1976.

Procedure

Each adolescent was individually administered both the WISC-R and the WAIS. For each subject, the Scales were administered consecutively with a short rest period between administrations. The two Scales were administered in a counterbalanced order to account for possible practice effects. All evaluations were done in a school setting by either the investigator or his colleague, both of whom are licensed examiners. There was no systematic assignment of individuals to examiners.

Results and Discussion

The *t*-test for correlated means supported the investigator's hypothesis that for mentally retarded sixteen-year-olds, the WAIS

reported significantly higher results than the WISC-R. In addition, using a *t*-test for independent means, significant races differences between whites and blacks were found. Table 1 indicates the difference between the WISC-R and WAIS for the total sample to be 14.4 points for Verbal, 10.2 points for Performance, and 13.5 points for Full Scale IQ. According to the *t*-test of means, all scaled scores of the WAIS, with the exception of Picture Arrangement, were also significantly higher than for the WISC-R. Among the subtests, the greatest difference occured with Similarities. Table 2 shows a comparison of mean WISC-R and WAIS IQs by race for both whites and blacks treated as separate groups. For both races, significant differences were found between the Verbal, Performance and Full Scale IQs, with the WAIS yielding higher scores as expected. Black Differences were significantly higher than white differences for the Verbal (t (23) = 1.75, $p < .05$) and Full Scale (t (23) = 1.77, $p < .05$). There was no significant difference between whites and blacks on the Performance Scale (t (23) = 1.17, $p > .05$).

A number of explanations has been offered generally for the lower WISC-R results. Sampling procedures and the possible changed background of experience of today's young people are two possibilities. The white-black differential is more difficult to account for. Since the ability to comprehend written directions is not a factor and since the examiner can make reasonably certain that the examinee understands both directions and test items, a number of other possibilities emerge. Among these are background of ideas and experiences, especially those related to school tasks, and difficulty with specific test items.

Problems dealing with memory, attention, perception and speed of response are others. The investigator plans to replicate the study as soon as a larger and more representative sample can be obtained. It is recognized, for example, that more white females are needed. An analysis and comparison of responses of whites and blacks on the WISC-R subtests would be helpful in identifying specific responses missed by each group. Other research is needed to explain differential test results for whites and blacks. Such investigations, in the examiner's opinion, will identify background variables as important factors.

The results of this investigation have practical as well as research implications. Until the revision of the WAIS is completed and made available, the practitioner will need to use his judgment when selecting a Wechsler Scale for screening suspected mentally retarded sixteen-year-olds. According to the WISC-R Manual, the WAIS has not been designated as inappropriate for sixteen-year-olds as a group; rather the evaluator is advised by Wechsler (1974) to "choose the Scale which is most appropriate for his purposes" (p. 53). Certain latitudes, of course, are extended to the professional evaluator when choosing and interpreting results of instruments. The wide discrepancies between results of the WISC-R and WAIS, however, require careful justification from the examiner. The investigator can easily forsee a situation in which a parent whose sixteen-year-old was clearly within the educable retarded range on the WISC-R questions the use of this instrument rather than the WAIS. What would an evaluator's response

be to the parent who asked if his child's educational placement would be different if he were tested a few days later when he was seventeen? It is unfortunate that the WAIS was not restandardized and released the same time as the WISC-R, thus avoiding the troublesome "overlap problem." In the author's opinion, an argument can be made for selecting the WISC-R for this group since the IQ measure is nothing more than an estimate of ability or scholastic aptitude compared with a person's peers. Because the WAIS was standardized some years ago, it is also entirely possible that scores on the WAIS give an inflated measure of ability for seventeen-year-olds and older.

At a time when intelligence testing, especially group testing, is being closely scrutinized and opposed from a number of sources, both lay and professional, the possibility for misunderstanding is magnified. Individual intelligence tests, such as the Wechsler Scales, have proven worth as good predictors of academic success. It is the ethical responsibility of all those involved in the evaluation of young people to guard against misuse of evaluation instruments and misinterpretation of results.

Table 1

Means and Standard Deviations of WISC-R and WAIS IQ Scales and Subtest Scores for Total Sample

(N=25)

	VIQ	PIQ	FSIQ	Inf.	Sim.	Ari.	Voc.	Com.	DSp.	PCo.	PAr.	B.D.	OAs.	Cod.
M WISC-R	68.32	72.60	68.16	4.72	5.24	4.96	4.72	5.08	5.72	6.48	6.32	4.68	6.44	5.28
SD WISC-R	11.46	16.85	13.73	2.09	2.42	2.70	1.98	1.99	2.69	3.05	3.98	2.74	3.29	3.27
M WAIS	82.72	82.80	81.68	5.52	8.60	5.76	6.32	7.04	7.16	8.00	6.68	6.84	8.28	7.24
SD WAIS	8.03	12.73	9.54	1.75	1.82	1.83	1.54	2.18	2.05	2.56	2.46	2.83	2.60	2.48
Difference of Means between WISC-R and WAIS	14.40**	10.20**	13.52**	.80*	3.60**	.80*	1.60**	1.96**	1.44**	1.52**	.36	2.16**	1.84**	1.96**

* $p < .05$.

** $p < .01$.

Table 2

Means and Standard Deviations of WISC-R and WAIS IQ Scales by Race

	Black (N=15)			White (N=10)		
	VIQ	PIQ	FSIQ	VIQ	PIQ	FSIQ
M WISC-R	62.92	68.84	63.00	74.16	76.66	73.75
SD WISC-R	10.50	16.34	12.20	9.74	17.14	13.55
M WAIS	79.69	81.30	79.00	86.00	84.41	84.58
SD WAIS	7.29	13.61	9.80	7.75	12.08	8.73
Difference of Means between WISC-R and WAIS	16.76**	12.46**	16.00**	11.83**	7.75*	10.83**

* $p < .05$.

** $p < .01$.

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